PROFESSIONAL ENGINEER

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Winter Issue

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A.A.E.
in Retrospect
Recognition–
Public Relations
Professional Standards
Registration

Vol. 44 No. 3

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Professional Engineer

"THE VOICE OF THE ENGINEER"

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Published Four Times a Year at Mount Morris, Illinois

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M. E. McIVER, Editor

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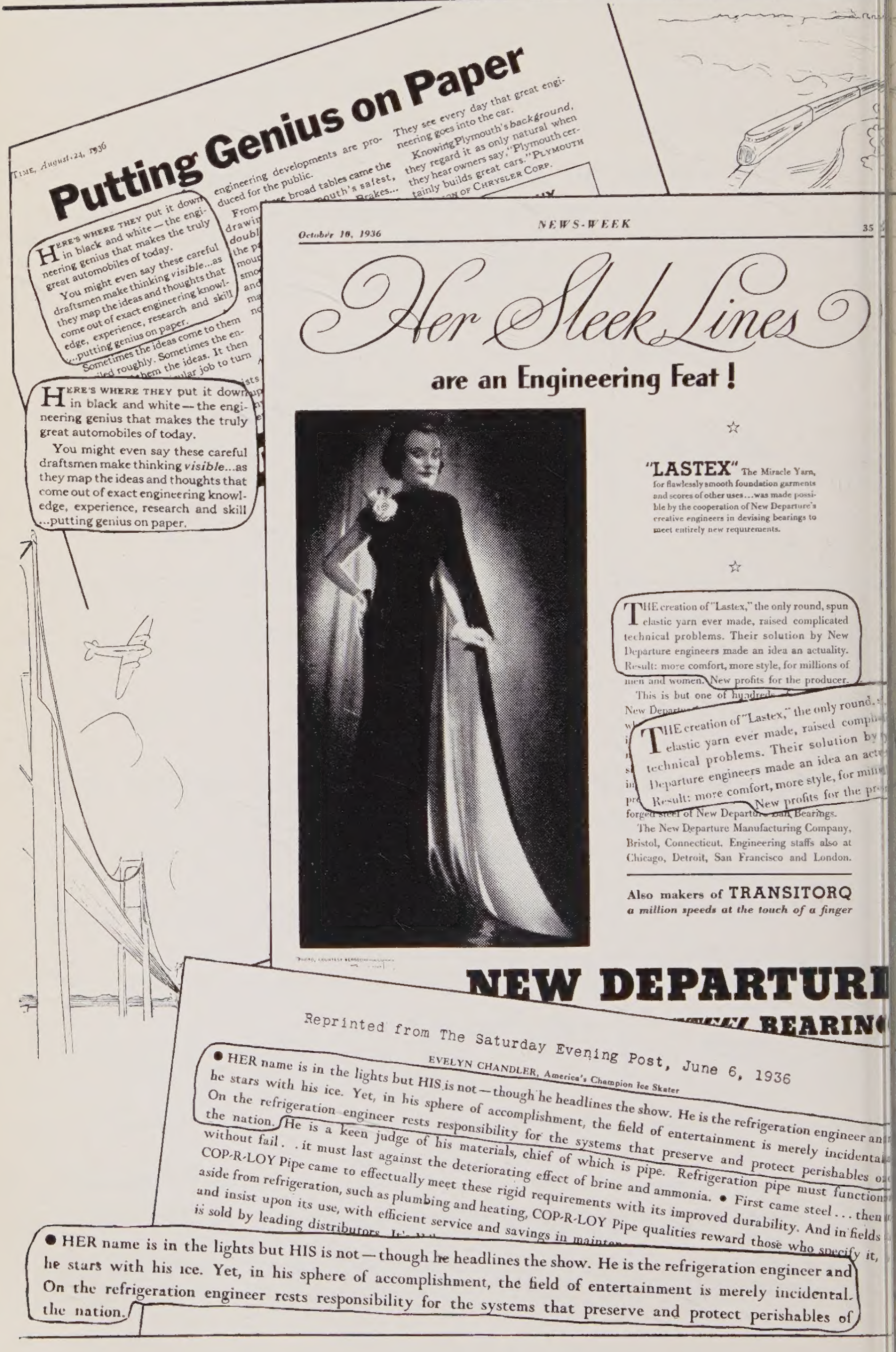
"— SO LONG - WE'LL SEE YOU IN THE AD



TIME, August 24, 1936

Putting Genius on Paper

HERE'S WHERE THEY put it down in black and white — the engineering genius that makes the truly great automobiles of today.

You might even say these careful draftsmen make thinking *visible*...as they map the ideas and thoughts that come out of exact engineering knowledge, experience, research and skill ...putting genius on paper.

Sometimes the ideas come to them roughly. Sometimes the en- ...them the ideas. It then ...ular job to turn

engineering developments are produced for the public.

From ... drawin... doubl... the p... mou... smo... and ... ma... n...

...broad tables came the ...outh's safest, ...Brakes...

They see every day that great engineering goes into the car.

Knowing Plymouth's *background*, they regard it as only natural when they hear owners say, "Plymouth certainly builds great cars." PLYMOUTH ...ON OF CHRYSLER CORP.

HERE'S WHERE THEY put it down in black and white — the engineering genius that makes the truly great automobiles of today.

You might even say these careful draftsmen make thinking *visible*...as they map the ideas and thoughts that come out of exact engineering knowledge, experience, research and skill ...putting genius on paper.

October 10, 1936 NEWS-WEEK 35

Her Sleek Lines

are an Engineering Feat!

☆

"LASTEX" The Miracle Yarn, for flawlessly smooth foundation garments and scores of other uses...was made possible by the cooperation of New Departure's creative engineers in devising bearings to meet entirely new requirements.

☆

THE creation of "Lastex," the only round, spun elastic yarn ever made, raised complicated technical problems. Their solution by New Departure engineers made an idea an actuality. Result: more comfort, more style, for millions of men and women. New profits for the producer.

This is but one of hundreds ... New Depar... forged steel of New Departure Ball Bearings.

The New Departure Manufacturing Company, Bristol, Connecticut. Engineering staffs also at Chicago, Detroit, San Francisco and London.

Also makers of TRANSITORQ
a million speeds at the touch of a finger

NEW DEPARTUR
BEARIN

THE creation of "Lastex," the only round, spun elastic yarn ever made, raised compli... technical problems. Their solution by ... Departure engineers made an idea an act... Result: more comfort, more style, for milli... New profits for the pr...

Reprinted from The Saturday Evening Post, June 6, 1936

EVELYN CHANDLER, America's Champion Ice Skater

● HER name is in the lights but HIS is not — though he headlines the show. He is the refrigeration engineer an... he stars with his ice. Yet, in his sphere of accomplishment, the field of entertainment is merely incidenta... On the refrigeration engineer rests responsibility for the systems that preserve and protect perishables o... the nation. He is a keen judge of his materials, chief of which is pipe. Refrigeration pipe must function without fail. . .it must last against the deteriorating effect of brine and ammonia. ● First came steel . . . then COP-R-LOY Pipe came to effectually meet these rigid requirements with its improved durability. And in fields aside from refrigeration, such as plumbing and heating, COP-R-LOY Pipe qualities reward those who specify it, and insist upon its use, with efficient service and savings in mainten... is sold by leading distributors...

● HER name is in the lights but HIS is not — though he headlines the show. He is the refrigeration engineer and he stars with his ice. Yet, in his sphere of accomplishment, the field of entertainment is merely incidental. On the refrigeration engineer rests responsibility for the systems that preserve and protect perishables of the nation.

Retrospect

The history of the Association from its founding through 1933 was
blished in *Professional Engineer* in four instalments beginning with the
cember, 1933 issue. It was a simple record of the "laboratory" method
ed to carry out the purposes for which the Society was founded. And
w twenty-five years later we stop and take inventory of our accomplish-
nts in order that we may more intelligently and purposefully plan our
ivities for the years ahead.

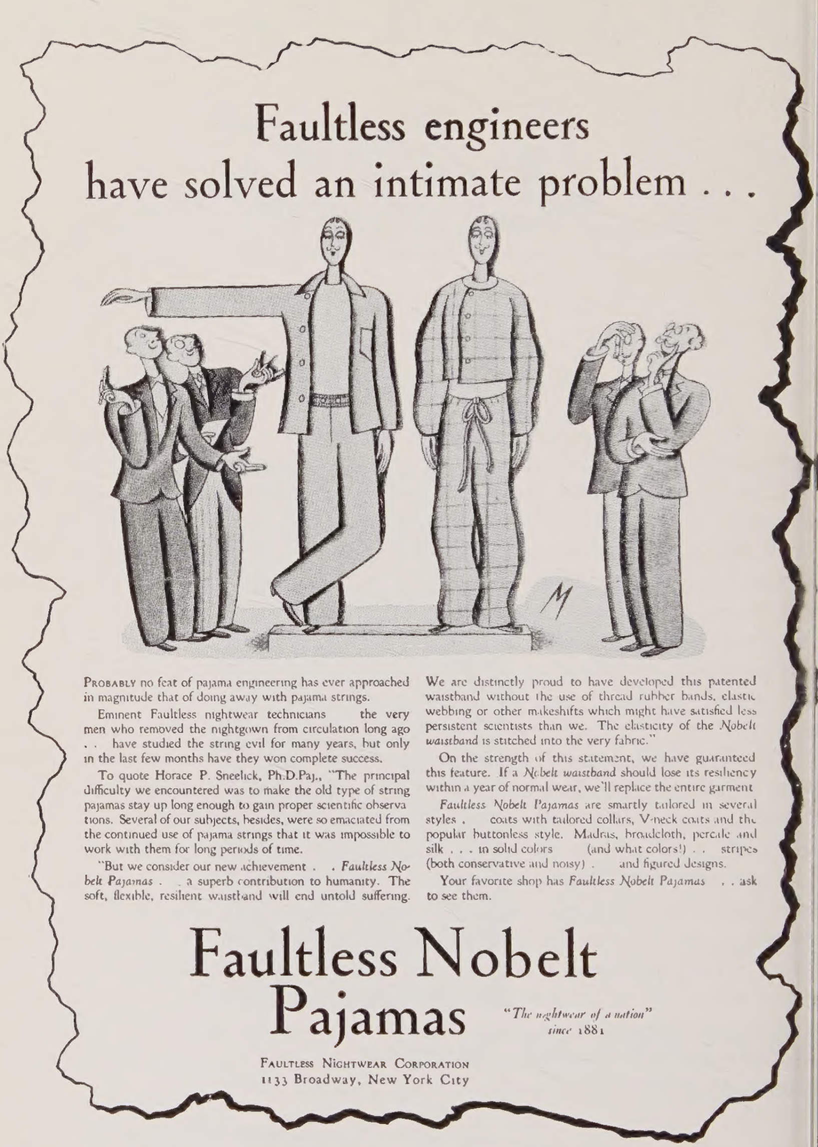
The fraternal character of the Association was strong and those early
rs which perhaps more than anything else accounted for the whole-
rted way in which the early members so confidently worked to accom-
sh the goal set for the Association by its founders—to raise the standard
ethics and promote the social and economic welfare of the profession.

Today we may not have this same fraternal spirit, but the aims and
als of A.A.E. remain the same, and although few of our members today
acquainted with the Association's early history, they do know that there
great need for a continuation of the same ideals, and are whole-heartedly
porting the movement, with the sincere hope that the engineers of to-
rrow will find their chosen profession more fully recognized and their
n contributions to society more adequately appreciated.

It is the hope of the editors that the recording of A.A.E.'s history—
ty-five years of pioneering in the field of professional problems—will
a helpful guide to the engineers of tomorrow.

Editor

B. In our campaign "Ask the Engineer" a number of years ago, we collected ads.
how how engineers and engineering was used in national advertising. Cut repro-
ed on opposite page. Reference on page 10.)



Faultless engineers have solved an intimate problem . . .

PROBABLY no feat of pajama engineering has ever approached in magnitude that of doing away with pajama strings.

Eminent Faultless nightwear technicians . . . the very men who removed the nightgown from circulation long ago . . . have studied the string evil for many years, but only in the last few months have they won complete success.

To quote Horace P. Sneelick, Ph.D.Paj., "The principal difficulty we encountered was to make the old type of string pajamas stay up long enough to gain proper scientific observations. Several of our subjects, besides, were so emaciated from the continued use of pajama strings that it was impossible to work with them for long periods of time.

"But we consider our new achievement . . . *Faultless Nobelt Pajamas* . . . a superb contribution to humanity. The soft, flexible, resilient waistband will end untold suffering. We are distinctly proud to have developed this patented waistband without the use of thread rubber bands, elastic webbing or other makeshifts which might have satisfied less persistent scientists than we. The elasticity of the *Nobelt waistband* is stitched into the very fabric."

On the strength of this statement, we have guaranteed this feature. If a *Nobelt waistband* should lose its resiliency within a year of normal wear, we'll replace the entire garment.

Faultless Nobelt Pajamas are smartly tailored in several styles . . . coats with tailored collars, V-neck coats and the popular buttonless style. Madras, broadcloth, percale and silk . . . in solid colors . . . (and what colors!) . . . stripes (both conservative and noisy) . . . and figured designs.

Your favorite shop has *Faultless Nobelt Pajamas* . . . ask to see them.

Faultless Nobelt Pajamas

"The nightwear of a nation"
since 1881

FAULTLESS NIGHTWEAR CORPORATION
1133 Broadway, New York City

Professional Engineer—away back when a great deal of work was being done in an effort to protect the term "professional engineer" carried an amusing story about the Pajama Engineer, an advertisement, with the result that the company refrained from further use of the term in its advertising in that fashion. Many other methods were used to discourage the misuse of the title; considerable correspondence was had with the census department of the Government, and in fact with anyone who did not properly use the title, including many of the then existing correspondence and trade schools.

Activities of the American Association of Engineers

1934-1959

The history of A.A.E.'s first Twenty Years was published in four installments beginning with the December, 1933 issue of Professional Engineer. In this issue and the one to follow we will bring the Association's activities down to date.

Recognition—Public Relations

Recognition was the term which ..A.E.'s founders and early lead- rs used to cover what is now iore popularly known as pub- c relations of the profession. In iose days it was believed that y educating the public in the ature of engineering and its serv- es to society most of the prob- ms of the profession would be lved. They over-simplified the roblem, however, in believing that e public's failure to recognize the rofession was due to misappro- riation of the title by artisans d mechanics. Consequently they ought that engineering rewards ould increase if the profession uld "protect" (meaning restrict) e title "engineer". Gradually the ssociation's conception of "recog- tion" broadened to cover a pro- am that might be fairly termed ublic relations."

It was the startling growth of .A.E. in its first five years and freedom from inhibitions in itiating novel activities to pro- ote the social and economic lfare of the engineer which ac- unted for the phenomenal publicity the Association had in trade and technical publications between 1915 and 1925. Soon, however, it was recognized as an instrument to be used in furtherance of the organization's growth and in support of its activities. Ivy Lee, top ranking public relations counselor, was retained to coach the staff and A.A.E. chapters in publicity technique. It was skilfully used in furtherance of the campaign to enact registration laws, in the frontal attack on dishonest trade and correspondence schools, and in inducing large state and local associations of engineers to affiliate with A.A.E. A very close relationship was recognized between publicity and activities designed to stimulate public service in the profession. Civic projects carried on by chapters were "news" they learned.

In these early years, A.A.E. established publicity channels, developed contacts, and learned to use publicity in furtherance of its major aims. This phase of the Association's public relations program is detailed in the history of A.A.E., published serially in 1933-

1934, under caption of Recognition.*1 The machinery established in the period of 1915 to 1934 has served A.A.E. well since that time in its campaigns to defend engineers' freedom of association under the Wagner Act and to amend that statute. It was the Association's best instrument in its fight on a series of bills, purporting to "mobilize science and technology" for advancement of national defense during World War II, on which Congress held hearings from 1941 to 1943 and which A.A.E. recognized as measures to regiment engineering in peace as well as in war time. Publicity was used to equally good effect in a number of projects discussed in the section of this history called "Civic Consciousness."*2

New Public Relations Approach

In 1936, American Association of Engineers embarked on a novel program of activities to improve the public relations of the whole profession. This program was based on the theory that engineering organizations have far less influence on society through their own releases than do other agencies and persons that vividly portray the profession in the course of their own activities. Radio commentators, advertising agencies, newspaper columnists, feature writers, authors of fiction, producers of movies, and many other "volunteers", the Association as serted, exceed in volume and effec tiveness the publicity output of a the engineering societies and thei official spokesmen. Furthermor the Association has contendec much of the material released b the societies appears in technica and trade journals not widely rea by the public, while the unofficia publicity reaches people throug the media of entertainment, popula magazines, fiction, radio, movie and newspapers.

To test this theory, A.A.E. i 1936 set up its "Public Relation Committee of the Whole", wit Colonel Walter R. Jeffrey as cha man. Every member of the Ass ciation was asked to participa actively in the work of one or mo of the sub-committees. They wer Fact Finders, Clipping Club, an Listeners In. It was not necessa to attend meetings; individuals i dependently gathered the materi that was needed for analysis of th profession's public relations.

From these groups Colonel Je frey's committee received a treme dous volume of advertisement newspaper columns, news storie magazine articles, and brochures i which engineering or engineer were portrayed. From others ther were brief reports of comment o the profession by federal and sta officials and politicians in the public discussion of government activities in which engineering wa an important factor. They cite radio commentators for their f vorable and unfavorable remar about engineers and engineerin and listed fiction, movies, an

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*1. *Professional Engineer,* October 1934, pages 20, 34.

*2. *Professional Engineer,* December, 1942; March, 1943; Dec. 1943.

nagazine articles which dealt with ngineering or gave the public an mpression of the nature of engieering, its remuneration, and ther pertinent matters.

Col. Jeffrey referred to other .A.E. committees—groups intersted in registration, classification nd compensation, ethics, engieering education, etc.—material ignificant to them.

At this time, the format of Proessional Engineer was changed. t became a pocket-size publication, lled with short, provocative artiles, which an engineer might arry about with him and read at is convenience. Because a great eal of excellent material appeared n a hundred or more journals of ngineering societies and trade nagazines highly significant in elation to the social and economic tatus of engineers, their civic bligations and services, and their ublic relations, the Association ecided to make Professional Enineer a sort of Reader's Digest, ynthesizing in this one publication he most interesting and signifiant non-technical articles that ppeared in the many engineering ublications.

In the public relations section of he new digest-type magazine, .A.E. set forth the findings of e Public Relations Committee of e Whole. Material collected by embers seemed to verify A.A.E.'s elief that the profession had little ontrol over the picture of engieering that was being presented the public. On the whole the ortrait was flattering, almost to e point of glamourizing engieers, but tended to represent the typical engineer as a man performing superhuman feats in dramatic circumstances, or left the impression that engineering was a sort of chattel of industry—valuable, but a property, not a free agent contributing consciously in unspectacular ways to the health, safety and prosperity of society. Excellent material was furnished by the Public Relations Committee of the Whole.

A.A.E. Cultivates Columnists and Commentators

With the thesis established, that outsiders exceed in volume and effectiveness the material released by the engineering societies, A.A.E. was then faced with the need of experimenting to discover how these agencies could be induced to put before the public a slightly more realistic picture of the nature of engineering, emphasizing its true social contribution. The Association made contact with the radio commentators who characterized engineering. Scripts were obtained and published in Professional Engineer, with praise for the broadcasters who did the best jobs. Then, through letters or visits, A.A.E. encouraged these popular radio personalities to continue their good work and to help the Association make the public understand that the great good they receive from engineering is the service of thousands of competent engineers, working at unspectacular but essential jobs—not only the spectacular achievements of those who perform dramatic, dangerous feats such as those depicted in movies, novels, and radio serials. A.A.E.'s "Ask the Engineer" campaign (to be discussed under the section of this story entitled "Civic Consciousness") originated in its work with such celebrities as Boake Carter, Major Bowes, and Todd Hunter (columnist)*.

With a column called "Rahs and Rahs-berries" A.A.E. singled out ad writers, columnists, and commentators who signally advanced engineering public relations. There were "Nine Rahs" for the men who most competently pictured to the public the work done by engineers; "Rahs-berries" for those who were guilty of misrepresentation or unfair derogation.

Despite the generally flattering reference to engineers, architects, chemists, and other scientists found in institutional advertising of industry, technology still does not have as constructive representation in those ads as do doctors and dentists in the advertising of their industrial affiliates. The pharmaceutical industry and insurance companies do (like the affiliates of engineering) "cash in" on public confidence in doctors and dentists by advertising which cites their approval of a product or lauds the wisdom of "preventive medicine", but they also publish institutional advertisements in which they purposely foster the estee
and confidence of the public
these two groups. They prai
"preventive medicine" in ads whic
adjure people to "see your denti
twice a year" or "consult yo
physician".

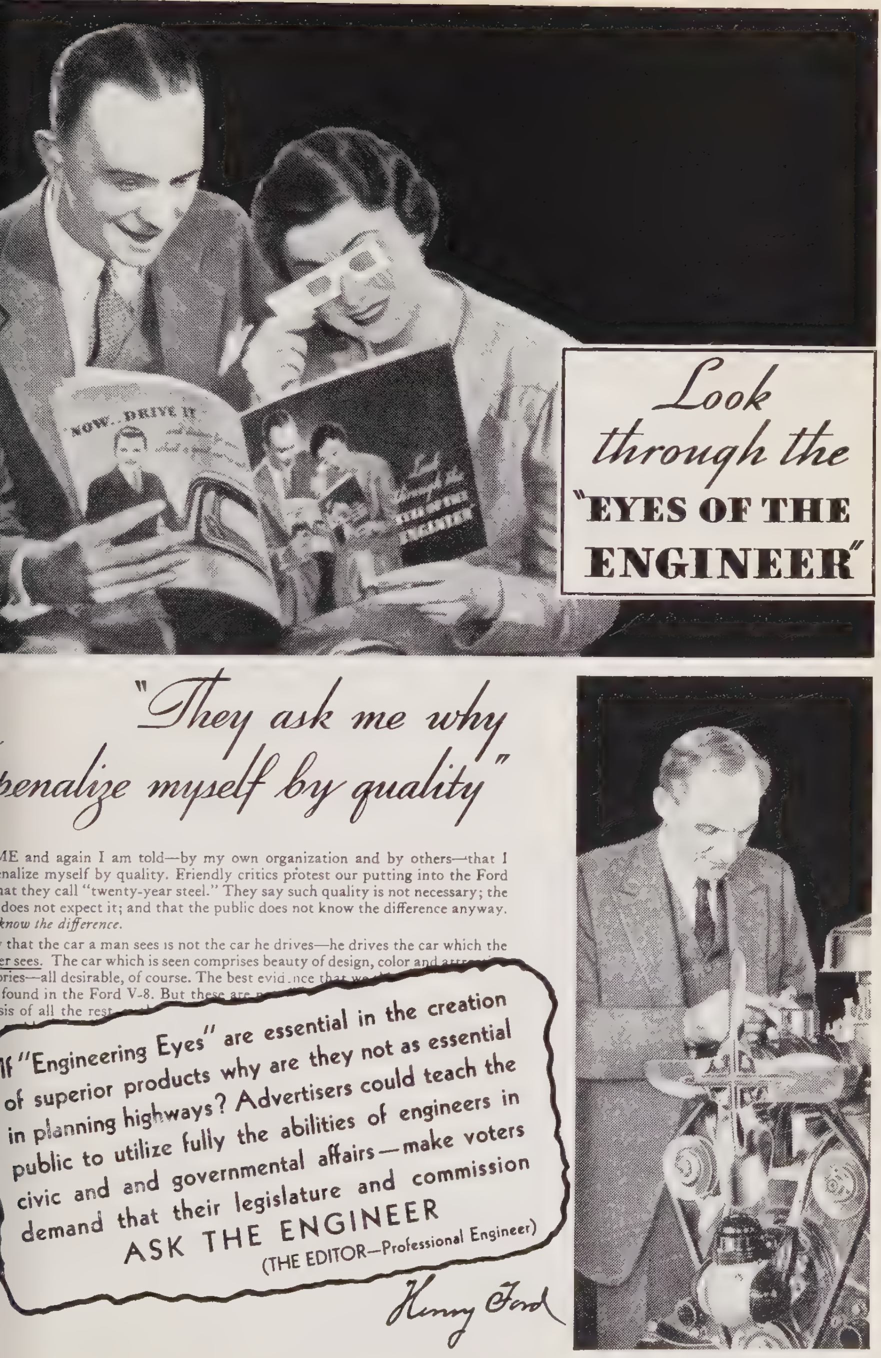
If engineering's affiliates ga
comparable support to the pr
fession, manufacturers of ro
building machinery would adju
citizens to see that engineeri
knowledge and judgment are us
to the fullest degree in *planning*
well as in designing and construc
ing public works. They would insi
that civic groups and office holde
"Ask the Engineer, the Man W
Knows" about all proposed pub
improvements while they are s
in the planning stage. The prof
sion is not likely to get ideal pub
relations support from indus
until all the societies recognize t
advantage of such cooperation a
urge the great manufacturing co
panies to emulate the pharm
ceutical industry's all-out supp
of medicine and dentistry. In t
meantime, A.A.E. cultivates the
agencies, praising the best ads a
commentaries, and releasing
them the kind of material that be
inculcates in the minds of peop
a realistic concept of engineeri
and its contribution to society.

Professional Engineer, July, 1937, p. 24; March, 1941; August, 1938.

Note ad on opposite page to illustr
our point. *Professional Engineer,* D
1936.

9 *Rahs for* . . . the Mutual Broadcasting System for its vivid description of the first pouring of concrete at Parker Dam and its reference to Engineers and their relationship to this great engineering project. "Engineers," said the announcer, "have what it takes to put it over."

18 *Rahs-Berries for*
Delaware State Legislature for its failure to pass engineering registration law.


NOW..DRIVE IT

Look through the "EYES OF THE ENGINEER"

"They ask me why
penalize myself by quality"

ME and again I am told—by my own organization and by others—that I nalize myself by quality. Friendly critics protest our putting into the Ford hat they call "twenty-year steel." They say such quality is not necessary; the does not expect it; and that the public does not know the difference anyway. *know the difference.*

that the car a man sees is not the car he drives—he drives the car which the er sees. The car which is seen comprises beauty of design, color and ories—all desirable, of course. The best evidence that found in the Ford V-8. But these are sis of all the rest

If "Engineering Eyes" are essential in the creation of superior products why are they not as essential in planning highways? Advertisers could teach the public to utilize fully the abilities of engineers in civic and and governmental affairs—make voters demand that their legislature and commission

ASK THE ENGINEER

(THE EDITOR—Professional Engineer)

Henry Ford

Professional Standards

Education Vocational Guidance Ethics

Founders of the American Association of Engineers clearly stated the organization's determination to "encourage and develop the efficiency of the Engineer". Activities which grew out of this basic aim were varied; many of them were described fully in the Association's history, published in 1933-1934.

Such activities included campaigns for broadcasting engineering education by incorporating courses in report writing and public speaking, in the "humanities", in commercial law and the rudiments of accounting, and in other subjects which would enable engineers to appreciate non-technical aspects of their work—to understand both the business side of engineering and its social implications.

Not only did the Association urge the schools to broaden their curricula; through its chapters the organization set up extension courses in which engineers could make up deficiencies in their education.

Failing to induce other societies to collaborate in a classification of engineering schools (although all the societies had developed confidential criteria for guidance of their "qualifications committees" which ascertained membership grades) A.A.E. authorized eminent educators who were members of the Association to prepare and publish a classification of engineering schools. In this, and other activities, some of the establish societies found A.A.E. presum tuous and held themselves aloo A.A.E., undismayed by their di dain, proceeded without their bles ing or collaboration. Alone, for i stance, it waged war on dishone trade and correspondence schoo To eliminate misfits, the Ass ciation instituted experiments vocational guidance. A "practi committee" (which was a sub-com mittee of the committee on ethic developed a code of "specific pr ciples of professional condu based on real and hypotheti cases submitted to the practi committee. As the other societi through coalitions and joint ag cies assumed responsibility these problems, A.A.E., recogn ing the essentiality of unified su port, has gladly dropped its "g it-alone" attitude and endorsed t activities of the societies' seve joint agencies. A.A.E., of cour continues to work at objectiv such as its war on dishonest tra and correspondence schools, whi have not yet been embraced by t other societies. This was a mo successful campaign and result in closing several schools and t formation of the National Ho Study Council, still actively kee ing tab on correspondence schoo

Since the Engineers Council f Professional Development w created, it has functioned with su deep understanding of the deman which the technological age i oses upon engineering schools, nd with such unreserved coopera- ion and respect from all engineer- ng societies, that American Asso- iation of Engineers looks upon it s the profession's official spokes- an in all matters pertaining to ducation. The Association has ade studies of the market for ngineering services, of engineer- ng registration laws, and other roblems and these studies it be- ieves may be useful to ECPD. .A.E. stands ready at all times o cooperate in any possible way. 'or example, the Association has ndertaken no major project in the eld of vocational guidance since CPD, in its scholarly but prac- ical way, accepted responsibility or this task. At the time the Asso- iation's history was published, .A.E. was sponsoring *Vocational uidance in Engineering Lines,* a ook compiled and edited by the ate Dr. J. A. L. Waddell, eminent nd world renowned bridge engi- eer. Since that time A.A.E.'s only ontribution made directly to this ause was a series of reports on ocational guidance literature pro- luced by other professions.

In the series of reports on voca- ional guidance in other profes- ions, A.A.E. briefed an excellent rochure prepared and distributed y the American Dental Associa- ion's Council on Dental Education. There was much information in the rochure which has a parallel in ngineering; it was suggestive of ontent and form that would be aluable in a similar treatise on ngineering.

Two valuable booklets published by American Bar Association were also briefed. The first of these, entitled "Look Before You Leap", was directed to law graduates preparing to begin practice. The second pamphlet was called "Getting Started" and, like the dentists' brochure, was full of practical information on choosing a location and setting up and equipping an office. Engineering as yet has no comprehensive manual comparable to "Dentistry as a Profession" or the two publications of the American Bar Association.

In the field of ethics, A.A.E. recognizes the leadership of ECPD. A.A.E. is one of the many societies which have officially adopted the Canons of Ethics and specific principles of professional conduct formulated by the Engineers Council for Professional Development. The Association's only independent contribution was a history of the development of ethical standards of engineering which it prepared at the request of The American Academy of Political and Social Science for publication in The Annals of the Academy (January 1955 issue). A.A.E. was chosen by the Academy because the Association had prepared the statement for engineering in the Academy's original report (Annals, May, 1922) on Ethical Standards and Professional Conduct.

Many A.A.E. publications are being used freely by technical groups and committees, by engineering educators, and by libraries as reference material. Both the 1940 "Survey of the Market for Engineering Services" and the

"Market for Engineering Services Before and After VJ Day" are still in demand where students and teachers are interested in the economic or business side of engineering as distinguished from technology. Where student chapters are concerned equally with technology and professional problems there is great interest still in A.A.E. material dealing with the effect of the Fair Labor Standards Act and the Wagner and Taft-Hartley Acts on engineers. These publications are discussed in the section of this story entitled "Unity in the Profession". The Association's book, *Technologists' Stake in the Wagner Act,* and its series of articles entitled *Technologists' Stake in the Taft-Hartley Act* are the basic references for programs on unionization of engineers. There is great interest now in a study by A.A.E. entitled "Engineer Unions from the Reviewing Stand" (covering the period of 1947-1957) which was published in PROFESSIONAL ENGINEER in the fall and winter issues o 1956 and the spring issue of 195

Engineering schools and eng neering societies have realized tha engineering students need to ex plore professional problems an to understand the principles o professional conduct before gradu ation. Rather amusing evidenc that graduates are emerging fro engineering schools with fairl strong ideas on such problems a unionization can be seen in stat ments in the house organ of th Minneapolis Federation of Honey well Engineers which indicat that young graduates and studen trainees are largely responsible f repudiation of union leadership i the Minneapolis Honeywell plan In all its publications, howeve American Association of Enginee has abstained from indoctrinatio it has instead adhered to the pri ciples of true education and o engineering. It has set forth th facts.

The Registration Movement

American Association of Engineers has been recognized among the engineering societies as the original champion of the registration movement. In the period of 1919-1929, when other societies were indifferent, or actually hostile to the movement, A.A.E. campaigned vigorously for enactment of registration laws in 14 states. Headquarters furnished the ammunition and leadership while its state and local groups bombarded state legislatures. They convinced lawmakers that such statutes were essential for the protection the afforded society, not primarily fo protection of the profession. The argued that the life, health, an property of citizens were endan gered by incompetent or unethica engineers and that registratio laws would weed out these male factors. A.A.E. was influential i successful movements to enact law in 31 states.

During this period of militan support of registration, A.A.E cooperated whole-heartedly wit the state boards of engineerin

aminers. In fact, they sponsored
e first "reciprocity" meeting of
aminers in Chicago in 1920
hich resulted in formation of the
ational Council of State Boards
Engineering Examiners. In the
suing years, they were kept in
ose touch with the Council
rough A.A.E. members who suc-
ssively served as president of the
ganization. Among these leaders
the registration movement were
r. G. M. Butler, Dr. D. B. Stein-
an, C. S. Hammatt, O. Laurgaard,
mes K. Rhyne, and George Tay-
r.*

After 1929, when other societies
ok a positive stand in favor of
gistration laws and gave active
pport to the enactment of such
easures, A.A.E. began to turn its
tention to a critical examination
the laws in operation, with a
ew to strengthening the statutes,
tending coverage of the acts, and
oviding for better enforcement
the laws.

Despite its strong championship
the registration movement,
A.E. never regarded registration
an end in itself. It was always
pported by A.A.E. as a means to
end. Registration was important
it helped "promote the social
d economic welfare of the Engi-
er" and as a means of advancing
nity in the profession". Ironi-
lly, the movement has not nota-
promoted unity. It has, instead
nded to create new lines of cleav-
e, and bring about a new sort of
atification.

In the beginning it was impossible to enact strong laws. The opposition of non-professionals alone could have defeated such measures. Furthermore, the profession could write such laws only after the relatively weak laws had been tested in actual operation to show what modifications and extensions were needed. Existing laws could be strengthened only after a majority of engineering societies recognized the value of strong, enforceable statutes.

Survey of Registration Laws

In 1935, American Association of Engineers prepared and published the first critical and comprehensive survey of engineering registration laws. The December, 1935 issue of PROFESSIONAL ENGINEER was devoted to this survey. With charts and explanatory text it analyzed the content of all engineering registration laws, setting forth their coverage, their provisions in respect to qualifications of registrants, and their clauses outlining administration and enforcement. Comparing the laws one with another showed their relative strength, but the effectiveness and extent of engineering registration laws was made even clearer by a comparison of engineering licensure with licensure of doctors and lawyers. These charts graphically proved that the licensure laws of other professions were much stronger from the standpoint of enforcement provisions. They also proved that medical licensure demanded far greater educational qualifications for practice than either engineering or law. The survey highlighted the weaknesses of

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ee PROFESSIONAL ENGINEER, Oct. 1934,
ages 13-19.

engineering registration laws and became the basis for A.A.E.'s campaign to improve the coverage and enforceability of these statutes.

In 1936, American Association of Engineers created its Public Relations Committee of the Whole. Its nature and functions are discussed in another section of this story, captioned "Recognition—Public Relations". Through this committee, individual members of the Association kept information flowing into headquarters. It was this material which furnished A.A.E. much concrete information concerning operation of the registration laws.

"Missing Molars in our Registration Laws" was the title of a department of PROFESSIONAL ENGINEER in which this material was published. Thus A.A.E. was able to show other engineering societies where the laws needed improvement. These were the principal weaknesses unceasingly spotlighted by A.A.E., citing actual cases to prove the need of correctives:

1. The laws as written provided no protection whatever for engineers in beginning grades of practice.
2. Too broad interpretation of ambiguous clauses intended to protect the title caught in the net of enforcement nonprofessional engineers, who, by long established usage had legitimate claim to the title "engineer"; such controversies occasioned unnecessary and harmful antagonism.
3. Many terms used in the laws (particularly "responsible charge") gave such discretionary power to administrators as to make the constitutionality of the registration laws doubtful. (Exemplified in the Illinois decision that the 1941 Illinois Registration law was invalid.)
4. Administrators of registration laws were made responsible for enforcement of the laws (for apprehending
violators, including those guilty of
authorized practice). They were gi
no agents (to police and prosecu
and no clerical force to handle
forcement. This duty devolved u
local law enforcement officers w
were incapable of recognizing
authorized practice. Actually,
board relied upon individuals and u
local units of engineering societies
police engineering practice and rep
unauthorized practice, unethical c
duct, and incompetency; these dut
were distasteful and both individu
and groups were reluctant to br
charges and become involved in en
ing procedures against offenders.
5. A new type of violator of registrat
laws developed during the depress
when non-engineers or pseudo-en
neers had been given engineering ti
on WPA and other relief projects
public works, sometimes engineer
jobs, and were entrenched in fede
state, county, and municipal jobs,
empt from the registration laws
therefore beyond the reach of e
neering registration boards.

Detection of unauthorized pr
tice or illegal use of the title,
publicizing ineffectualities of
registration laws became an A.A.
responsibility. The Associatio
representatives at all inter-soci
conferences on registration spre
A.A.E.'s findings before the de
gates and urged improvements
the laws. There have been so
measurable improvements—nota
in the provision incorporated
many laws for registration of e
gineers-in-training, bridging t
illogical gap between graduati
and advancement to responsi
charge.

Outstanding for his realis
view of registration and his
sultful efforts to strengthen reg
tration statutes was A.A.E.'s pa
president, board member, and re
resentative of the Association
many registration conferences, t

e C. J. Ullrich of Utah. Until his ath in 1957, he gave generously his time to the registration vement and must be credited th many improvements in the ginal registration statutes.

The Special committee on the odel Law Revision of the Na- nal Council of State Boards of gineering Examiners was held in bruary, 1959, in the Engineers Society Building, New York, in which Arthur Richards, representing A.A.E. was one of the 25 society representatives. A draft of a proposed revision to the 1946 Model Law was discussed, but no action taken. The proposed revisions will be taken up in a future meeting.

(This history to be continued in the next issue of the magazine.)

Carabao Anyone?

From Chet Eyer, one of our members now stationed at Agana, Guam, Water Division Manager, Public Utility Agency, comes this interest- g news item. Engineer Eyer was fortunate this summer while on vaca- n to take a most enjoyable trip around this old world of ours.

How many Water Departments have trouble reports reading like s?

Nature of trouble: Broken water main.
Work done: Repair broken main by installing repair sleeve.
Cause or remarks: Broken by carabao pushing main out of alignment.
Location: Etc., etc.

The water mains on Guam are very near the surface, and in loca- ns outside of the villages are often on top of the ground. The carabao ater buffalo) make "wallow pits", and in so doing push everything out their way.

Guam is the most westerly Territory of the United States and is southernmost and largest island of the Marianas group. It is 30 miles g and 4 to 8½ miles wide. The central and northern portion is a broad raced plateau without streams, while the southern portion is quite untainous and drained by numerous streams.

The average temperature is 74° to 84° with two seasons—dry and ny. The rainy season extends from July through December. There is average of 88″ of rainfall in a year.

The Public Utility Agency includes the Water, Electric, and Tele- one Systems which on Guam are interconnected with the military ablishments and many of the civilian communities. The present civilian ulation served is 38,578, distributed in 21 villages around the Island.

The water facilities were originally designed and built by the Mili- y Forces after the reoccupation and the materials used were for emer- ncy and temporary use. These were later released to the Government Guam for the civilian population.

The maintenance, replacement, relocation and extension have been

the problems of the Water Division. New filtration and storage proje
have been completed in the southern end of the island. Wells and sprin
are being developed in the central and northern ends to supply additio
water and fire protection. The Water Division has 6,708 water meters
service, metering an average of 65 million gallons of water per mon
A crew of 57 permanent employees do the maintenance, installation
new mains, filtration, pumping, chlorinating, testing and repairing
meters. The meter reading and billing is under the Accounting Sect
for all utilities.

The projected capital improvement program for development a
replacement is estimated at $2,109,000.00.

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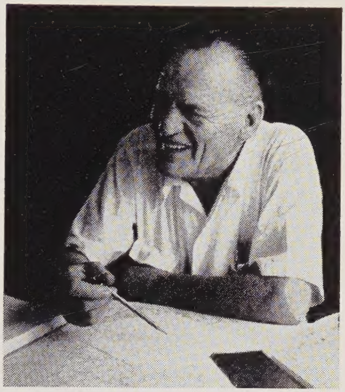

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The author became interested in mining during his freshman year at Yale and his first job took him into the wilderness of Northern Canada. Very shortly thereafter he went to Arizona and for the past 50 years he has been engaged in mining, as a mine operator, a consultant to large and small mines on matters of geology, mining methods, mine development, etc. With his vast experience and wealth of knowledge, as well as foresight he was exceptionally well qualified to prepare this outstanding piece of work. The Glossary is excellent, and compendium of Arizona Mines, most informational.

Mr. Dunning served seven years as Director of the Arizona Department of Mineral Resources; is a member of the American Institute of Mining & Metallurgical Engineers, and the American Association of Engineers.

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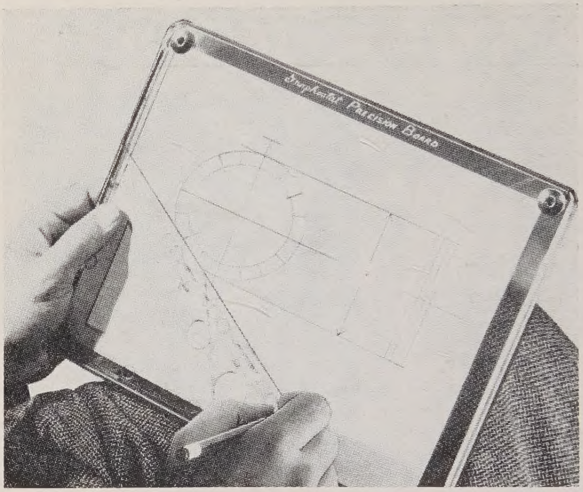

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